

Conference abstract

Improving Point-of-Care Ultrasonography (POCUS) Use in an Internal Medicine Residency Program

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INTRODUCTION

Our aim is to improve the integration of POCUS into the clinical practice of internal medicine residents by implementing a structured, faculty-led training program. We aim to increase the percentage of residents who independently utilize POCUS during clinical encounters by at least fifty percent within twelve months of program initiation. Secondary goals include improving resident confidence with POCUS and broadening the clinical settings in which POCUS is applied beyond the intensive care unit. Success will be measured through pre- and post-program surveys, direct observation logs, and resident self-reported use during clinical rotations.

METHODS

This initiative was developed using the IHI Model for Improvement. A multidisciplinary team — comprising residency leadership, hospitalist faculty, and chief residents — performed a fishbone-based root cause analysis identifying five key barriers: limited equipment availability, absence of a designated POCUS faculty champion, lack of protected training time, absence of a structured curriculum aligned with national competency guidelines, and limited attending role modeling during clinical rounds. PDSA cycles served as the iterative framework for implementation and refinement.

In PDSA Cycle 1, the department procured portable handheld ultrasound devices and appointed a faculty member with advanced POCUS certification as program director. A structured didactic and hands-on curriculum covering cardiac, pulmonary, abdominal, and vascular applications was launched. Monthly two-hour protected training sessions and a dedicated IM/EM POCUS rotation were integrated into the residency schedule, with open-access practice time available via resident sign-up. An attending physician POCUS orientation was also implemented to reinforce a culture of routine bedside ultrasound use and provide residents with role modeling during clinical rounds. Session attendance served as the primary process measure; absence of POCUS-related adverse events served as the balancing measure.

RESULTS

Of 36 residents surveyed at baseline, 17 completed the post-implementation survey following PDSA Cycle 1. All 17 respondents (100%) confirmed attendance at monthly POCUS sessions or completion of the dedicated IM/EM rotation, meeting the process measure target and confirming complete program reach.

Independent POCUS use on hospitalized patients rose from 6% at baseline to 71% — exceeding the 50% aim. Among active users, 47% applied POCUS in the ICU, 35% across multiple clinical settings, 6% on the general medical floor, and 12% in other settings, reflecting early expansion beyond the critical care environment. Resident confidence improved markedly: 50% reported feeling more confident and 44% somewhat more confident after the intervention, yielding a combined 94% with improved confidence compared to 0% at baseline. No POCUS-related adverse events were identified. Persistent barriers included time and workflow constraints (65%), lack of confidence (53%), limited machine availability (35%), and uncertainty about indications (6%).

CONCLUSIONS

PDSA Cycle 1 produced measurable and clinically meaningful improvements in resident POCUS utilization and confidence within a single academic year, with use extending beyond the ICU to the general medical floor and multiple clinical settings. The attending POCUS orientation established a foundation for role modeling and departmental culture change. Persistent barriers identified in the post-survey — particularly time constraints, confidence gaps, and machine availability — will directly guide PDSA Cycle 2, which will focus on embedding POCUS into daily rounding workflows, expanding equipment access across all inpatient units, and building resident confidence through a formalized competency-based assessment framework. Long-term, we aim to establish a program-wide POCUS credentialing pathway aligned with national internal medicine training standards. Sustainability will be monitored through quarterly surveys, with follow-up assessments at six and twelve months to track longitudinal progress.

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